



6690 Geeky Fun Fact

Geeks love to analyze things, often to the point where non-geeks would call it excessive. Those of us with a mathematical bent tend to like finding interesting facts about each year as it arrives, since virtually every number has something interesting to note about it. To save you some time, here are four facts about 2013 that you can memorize and use tonight to impress the friends, family, acquaintances, and/or possibly complete strangers with whom you're planning to ring in the New Year. If it's after midnight as you read this, there's always New Year's brunch conversation, right?

- 1. 2013 is composed of four different digits, and is the first such year since 1987.*
- 2. 2013 is composed of four sequential digits, although obviously not in order. The last such year was nearly 600 years ago, back in 1432. But the next such year is only 18 years away.*
- 3. 2013, 2014, and 2015 are consecutive years each of which is the product of three distinct primes ($3 \times 11 \times 61$, $2 \times 19 \times 53$, and $5 \times 13 \times 31$, respectively). The last such three-year sequence was back in 1885-1887, and the next one isn't until 2665-2667.*
- 4. As was 2012, 2013 is one of only 45 multi-digit numbers that, when spelled out in English, are alliterative (i.e., "two thousand thirteen").*

(www.wired.com)

Geeky Jerry has just read about these interesting facts but it is already November of 2013 so he has no chance to show off these facts. He realizes that the first fact is also correct with next year - the year of 2014 and he wants to know more about other years having such property.

Your task is to help Jerry write a program that given a year A , it should return the next year B the smallest year that is greater than A — such that each of its digits is unique.

Input

The input file consists of several data sets. The first line of the input file contains the number of data sets which is a positive integer and is not greater than 20. The following lines describe the data sets. Each data set consists of a positive integer A ($A < 10^9$).

Output

For each data set, write in one line the number B — the next year after A where each of its digits is unique.

Sample Input

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2
1987
2013
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Sample Output

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2013
2014
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